

FORENSIC SCIENCE DIVISION

Labyrinth - Quarterly Newsletter

September 2022



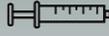
Biology

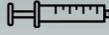
 Please remember to submit all necessary reference standards for DNA analysis. Without reference standards, analysis may not be conducted under the following circumstances:

- Cases that are ineligible for CODIS entry.
- Cases where informative results cannot be obtained without reference standards.

 Y-STR analysis has officially been added to the lab's ANAB accreditation.

Chemistry

 Average 30-90 day turn around time!

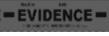
 Congratulations to the Chemistry section for winning the Wall Decoration contest in the Missoula lab! Feel free to schedule a tour to view all of the new wall displays!



Chemistry Wall

Evidence

 Starting November 1st, we will not accept in-person evidence submissions after 4pm. This does not apply to the morgue.

 Please check your submission forms AND evidence labels for accuracy and legibility prior to shipment/delivery. Deciphering handwriting and amending reports is an inefficient use of our time. Please double check the accuracy of the names of the officer(s), suspect(s), victim(s), agency, and agency location (if multiple).

Firearms

 Please communicate if firearms belonging to law enforcement are submitted so that the evidence can be expedited and returned to your agency as soon as possible.

 When a firearm is recovered in water, package it in a sealed bucket or container, submersed in the same water. The firearm may begin to rust if removed. The item should be hand delivered to the laboratory, particularly if it is difficult to ascertain if it is still loaded.

Latent Prints

 Make sure that gloves are worn when handling items that will be submitted for LP analysis. If an item is inadvertently handled without gloves, please submit elimination prints from the officer(s) involved.

 Please remember that known fingerprint cards should be treated as evidence, including sealing them properly in an envelope with evidence tape and initialing/dating the seals.

Toxicology

 Toxicology and Breath Alcohol will be undergoing lab space renovations in September and October. Please prepare for potential interruptions in turnaround times. Thanks for your patience!

 In August, Andrew Wade joined the Toxicology team from Ohio, where he previously worked in forensic toxicology and forensic chemistry. Welcome!

Miscellaneous

 Please submit subpoenas at least 10 business days prior to trial. If the trial is vacated, please cancel subpoenas as soon as possible.

 We continue to have supply issues with DUI/TOX kits. Please be conservative with your orders.

An Overview of Y-STR Analysis

By Forensic Scientist Andrew J. Bishop

As covered in the last newsletter, Y-STR DNA analysis is now online at the MT FSD. This general overview is intended to provide some more information for our user agencies.

The “Y” in Y-STR stands for the Y chromosome, which is a section of DNA that is specific to males. The “STR” portion of the acronym stands for “short tandem repeat,” which is the type of genetic sequence examined for most current DNA methods.

Because Y-STR testing only analyzes DNA from the Y (male) chromosome, it is male specific. This can be useful when applied to evidence that has a small amount of male DNA compared to a large amount of female DNA. This often occurs with body swabs and clothing taken from a female complainant. In this situation, traditional DNA analysis may not be able to detect or resolve the male DNA in a sample. This is where Y-STR analysis can be used to provide information on the male-specific DNA of an item. An additional advantage of Y-STR analysis is that it is more sensitive than traditional DNA testing, allowing analysis of samples that may contain small amounts of male DNA or degraded male DNA.

The major limitation of Y-STR analysis is that Y-STR profiles are not unique for each male individual. Since a male inherits their Y-chromosome from their biological father primarily unchanged, they have the same Y-STR profile as their biological father. This is true of all male individuals along the same paternal lineage. As a result, a Y-STR profile is not as rare as a traditional DNA profile. Cousins and other distant relatives can share the same Y-STR profile, which can introduce complications to a case.

This is one of the reasons why the MT lab uses Y-STR testing as a last resort. Not all items are suitable for this type of analysis, which is why case circumstances should be considered before requesting Y-STR testing. In addition, should informative results be obtained for an item using traditional DNA analysis, Y-STR analysis will typically not be performed. Please contact the lab’s biology section should you have any questions regarding Y-STR analysis.

Agency Updates

Please remember to inform the Crime Lab when changes are made that might affect cases submitted to us. If an officer has retired, resigned, or transferred to another agency, please let us know so that we are contacting the appropriate person with questions or reports about the case. If your agency would like our reports sent to a single email address (as opposed to, or in addition to, the individual officers), please let us know that as well. You can send updates regarding agency changes to contactdoj@mt.gov.



Additionally, when cases get closed out on your end, please notify the laboratory when work is no longer needed. This can help us focus our time and attention on cases that do need analysis, enabling us to get your results to you in a more timely manner.

Employee Spotlight

Jazmin Ortega is the newest member of the Crime Lab! Originally from Oaxaca, Mexico, Jazmin fell in love with Montana while visiting and moved here in 2020. She has a Bachelor’s degree in Forensic Investigation from Jacksonville State University in Alabama. She loves sports, exercise, and the outdoors, so Montana is the perfect place for her to enjoy her favorite hobbies like hiking, running, biking, skiing, kayaking, and paddleboarding, often with her dog, Ace. She also loves reading,



Jazmin and Ace



Jazmin Ortega

crafts, podcasts, food of all kinds, and coffee. We’re so happy to have Jazmin and her infectious smile joining the Missoula Evidence team!

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Please take the survey on our website.

